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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
JANAKIRAMAN, NITHYA	
ART UNIT	**PAPER NUMBER**
2123	
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05/28/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/734,450	TRAUT, ERIC	
	Examiner	Art Unit	
	NITHYA JANAKIRAMAN	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/8/2008 has been entered. Claims 1-40 are presented for examination.

Response to Arguments- 35 U.S.C §101 and §112

1. Applicant's arguments, see page 8, filed 1/14/08 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made under 35 U.S.C §101. See below.

Response to Arguments- 35 U.S.C §103

2. Applicant's arguments with respect to claims 1-40 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

3. Claims 4-10 are objected to because of the following informalities: portions of the claims appear to be missing. For example, claims 7-9 lack the phrase "the use of" following the phrase "enabled through". Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

5. Claim 1 recites a method consisting of a virtual device that is capable of being executed in two modes. However, no recitation of the actual execution of either mode is given. Thus, there is no useful, tangible and concrete result to the method claim. All depending claims are rejected as well.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,548,783 ("Jones") in view of US 2003/0061497 ("Zimmer").

7. Jones discloses a bimodal device that operates in either a high performance mode or a mode which emulated a hardware device (see column 9, lines 19-35). However, Jones' bimodal device is a physical device, not virtual.

8. Zimmer discloses a virtual device.

9. Jones and Zimmer are both analogous art because they are both related to emulation/virtualization of hardware devices.

10. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the virtual device of Zimmer with the bimodal device of Jones to create a bimodal virtual device, motivated by the desire to "protect key data and code regions for safety and security" (Zimmer, paragraph [0010]).

Examiner's Note: Applicant's specification (see Abstract) has equated the term "idealized virtualization" with "high-performance mode".

11. Regarding claim 1, Jones and Zimmer teach:

A method for implementing a bimodal *(Jones: column 9, lines 19-35, "two modes of operation")* virtual device *(Zimmer: paragraphs [0010]-[0011], "VMM")* in a computer system, said method comprising:

configuring the bimodal virtual device such that it selectively operates with one or more virtual machines in two different modes *(Jones: column 9, lines 19-35, "the drive array controller includes two modes of operation")*,

a first mode comprising a hardware mode during which the bimodal virtual device emulates a specific hardware device *(Jones: column 9, lines 19-35, "AHA emulation mode, which causes the drive array controller to emulate an Adaptect AHA-1540 controller")* and is accessed by a virtual machine *(Zimmer: paragraphs [0010]-[0011], "VMM")* via a device driver that is configured to drive the specific hardware device *(Jones: column 9, lines 19-35, "AHA emulation mode, which causes the drive array controller to emulate an Adaptect AHA-1540 controller"; Jones would inherently require a device driver to drive the AHA controller)*, and

a second mode comprising an idealized mode where the bimodal virtual device *(Zimmer: paragraphs [0010]-[0011], "VMM")* is optimized for a virtualized environment *(Jones: column 9, lines 19-35, "high-performance mode")* and wherein said virtual device operates without emulating the specific hardware device *(Jones: column 9, lines 19-35, "high-performance mode designed for use on platforms which include device drivers written to drive a composite drive and which thus attain increased performance")*.

12. Regarding claims 2, 12, 22, and 32, Jones and Zimmer teach:

The method of claim 1 wherein:

the bimodal virtual device selectively operates in the hardware mode when a device driver interfacing with said bimodal virtual device has not been designed to interface with said bimodal virtual device operating in said second mode (*Jones: column 9, lines 19-35, "two modes of operation"; "AHA emulation mode, which causes the drive array controller to emulate an Adaptect AHA-1540 controller")*; and

the bimodal virtual device selectively operates in the idealized mode when the driver interfacing with said bimodal virtual device has been designed to interface with said bimodal virtual device operating in said second mode (*Jones: column 9, lines 19-35, "two modes of operation"; "high-performance mode designed for use on platforms which include device drivers written to drive a composite drive and which thus attain increased performance").*

13. Regarding claims 3, 13, 23, and 33 Jones and Zimmer teach:

The method of claim 2 wherein the functionality of the second mode extends the functionality of the first mode (*Jones: column 9, lines 19-35, "high-performance mode designed for use on platforms which include device drivers written to drive a composite drive and which thus attain increased performance"*).

14. Regarding claims 4, 14, 24, and 34, Jones and Zimmer teach:

The method of claim 2 wherein the functionality of the second mode is independent of the functionality of the first mode *(This property is inherent Jones' multimodal device).*

15. Regarding claims 5, 15, 25, and 35, Jones and Zimmer teach:

The method of claim 4 wherein the functionality of the second mode disables the functionality of the first mode *(This property is inherent Jones' multimodal device; both modes cannot be running simultaneously).*

16. Regarding claims 6, 16, 26, and 36, Jones and Zimmer teach:

The method of claim 4 wherein the functionality of the second mode disables portions of the functionality of the first mode *(This property is inherent Jones' multimodal device; both modes cannot be running simultaneously).*

17. Regarding claims 7, 17, 27, and 37, Jones and Zimmer teach:

The method of claim 2 wherein the second mode is enabled through the use of at least one bit in a virtual device register *(This property is inherent in Jones' and Zimmer's virtual multimodal device)*.

18. Regarding claims 8, 18, 28, and 38, Jones and Zimmer teach:

The method of claim 2 wherein the second mode is enabled through the use of at least one bit in a register specifically created for utilization by one or more virtual devices *(This property is inherent in Jones' and Zimmer's virtual multimodal device)*.

19. Regarding claims 9, 19, 29, and 39, Jones and Zimmer teach:

The method of claim 2 wherein the second mode is enabled through the use of a prescribed sequence of commands or data that change a value in at least one register *(This property is inherent in Jones' multimodal device)*.

20. Regarding claims 10, 20, 30, and 40, Jones and Zimmer teach:

The method of claim 2 wherein the second mode is enabled through the use of a second mode driver installed within a guest operating system environment *(This property is inherent in Jones' multimodal device)*; and

if the second mode driver is not present, a first mode driver is instead enabled *(This property is inherent in Jones' multimodal device)*.

21. Regarding claims 11, 21, and 31, Jones and Zimmer teach:

A computer system, said computer system comprising a bimodal *(Jones: column 9, lines 19-35, "two modes of operation")* virtual device *(Zimmer: paragraphs [0010]-[0011], "VMM")* that selectively operates as:

a hardware virtual device in a first mode *(Jones: column 9, lines 19-35, "AHA emulation mode, which causes the drive array controller to emulate an Adaptect AHA-1540 controller")*; and

as an idealized virtual device in a second mode *(Jones: column 9, lines 19-35, "high-performance mode")*;

wherein the first mode the bimodal virtual device emulates a real hardware device *(Jones: column 9, lines 19-35, "AHA emulation mode, which causes the drive array controller to emulate an Adaptect AHA-1540 controller")*, and in the second mode the bimodal virtual device

functions as an abstract device that is a same type of device as the real hardware device but is incompatible with software configured to interact with the real hardware device *(Jones: column 9, lines 19-35, "high-performance mode designed for use on platforms which include device drivers written to drive a composite drive and which thus attain increased performance").*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NITHYA JANAKIRAMAN whose telephone number is (571)270-1003. The examiner can normally be reached on Monday-Thursday, 8:00am-5:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on (571)272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nithya Janakiraman/
Examiner, Art Unit 2123

/NJ/

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123